Exhibit 21

IFFF	STANDARDS	ASSOCIATION	Contact	TAOs.	
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IEEE-SA RECORDS OF IEEE STANDARDS-RELATED PATENT LETTERS OF ASSURANCE FOR IEEE STANDARD 802.11 AND AMENDMENTS

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RevCom	
ProCom	
PatCom	
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Stds Coordinating Committees	

Std No.	Patent Owner	Contact for License	Patent Serial No. (if Indicated)	Letter Date	Assurance Rec'd	Pate record entered or revised (if known)
802.11	University of California, Depart- ment of Electrical and Computer Engineer- ing - Davis, California 95616	Dr. Kamilio Ferer, tel: 1-916-752-8127, fax: 1-916-752-8428	4,339,724 US 1130871 Canada 4,567,602 US 1211517 Canada 4,644,565 US 1265851 Canada	1 Jul 94	yes	
802.11	Motorola Inc. 1303 East Algonquin Road, Schaumburg, Illinois 60196	Hugh C. Dunlop - European Patent Attorney, tel: 1-708-576-0379, fax: 1-708-576-3750	not Indicated	1 Mar 24	yes	W. SECTOR CONTRACTOR SECTION OF THE SEC
802.11	Intermec Corp 6001 36th Avenue West, PO Box 4280, Everett, WA 96302-9280	L. David Rish - Intellectual Property Law Counsel	not indicated	26 Oct 95	yes	
802.11	Standard Micro- systems Corp	Brad Herrin - Manager Portable Systems email: Bradley.Herrin@att	none known	00 Dec 95	yes	
802.11	Japan Radio Co., Ltd. No. 5-1-1 Shimorenjaku Mitaka-Shi, Tokyo, Japan	Yoji Makishima - General Manager, R&D Dept. tel: 0422-45-9222, fax: 0422-49-6297	5-33091 5-83599 5-84386 5-46185 5-40944 5-40819 5-288554 5-275580 6-1431 7-139580 7-35748 JAPAN	6 Feb 96	yes	
802.11	Xircom	IBM Director of Licensing	not indicated	10 Oct 95	yes	
802.11	Interna- tional Business Machines Corp	IBM Director of Licensing	not indicated	16 Oct 95	yes	
	Columbus					

PLAINTIFF'S EXHIBIT
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802.11	International Business Machines Corp North Castle Drive, Armonk NY 10504	Director of Licensing	not Indicated	23 Jan 02	yes	5 Feb 02
802.11	Novell, Inc. 1555 North Technology Way, Mall Stop A-232, Orem, Utah 84057-2399	Emamarie Messenger Chief Patent Counsel tel: 1-801-225-5000, fax: 1-801-222-5077	not indicated	20 Oct 95	yes	
802.11	Proxim, Inc. 295 North Bernardo Avenue, Mountain View, California 94043	Keith E. Glover - VP, Finance and Administration, tel: 1-415-960-1630, fax: 1-415-964-5181	5,231,634 US 5,412,687 US 5,077,753 US	19 Jan 96	yes	
802.11	Advanced Micro Devices, Inc One AMD Place, P. O. Box 3453, Sunnyvale, California 94088-3453	Robert Krueger - VP, 1/O and Networks Division, tel:1-408-732-2400	not Indicated	1 Mar 96	yes	
802.11	Aironet Wireless Commun- ications, Inc P. O. Box 5292, Falriawn, Ohio 44334-0292	Roger J. Murphy, Jr., President, tel: 1-216-665-7914, fax: 1-216-665-7986	5,276,680 US 2,040,234 Canada PCT/CA92/ 00149	8 Dec 95	yes	
802.11	AT&T 150 Allen Road - Sufte 2000, Liberty Corner, New Jersey 07938	Gene G. Partlow - Intellectual Property VP, tel: 1 908 903-6222, fax: 1-908-903-6321	not indicated	1 Nov 95	yes	
802.11	Samsung Electr- onics -Cypress, CA	Huy Nguyen email: hnguyen@att	none known	8 Dec 95	yes	
802.11	Sharp Corp - Tenri, NARA 632, Japan	Hirohisa Wakal - Supervisor ITRL-1, R & D Group, tel: +8174365-2466, fax: +8174365-2163	none known	12 Dec 95	yes	
802.11	Spectrix Corp 906 University Place, Evanston, Illinois 60201-3121	C. Thomas Baumgartner - Vice President, tel: 1-708-491-4534, fax: 1-708-467-1094	5,247,380 US also others not identified	28 Sep 93	yes	
802.11	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Richard Bravman - Senior Vice President, tel: 1-516-738-2400	not indicated	23 Apr 95	yes	
802.11	Andro- MeDa GmBH Benzstr.30, 82178 Puchhelm-Bhf	Peter Blomeyer - President tel: 49-89-8901480, fax: 49-89-806040	not Indicated	00 Nov 93	yes	
802.11	Apple Computer One Infinite Loop, MS 301-4J, Cupertino, California 95014	Paul D. Carmichael Director, Patents and Trademarks	4,689,786 US 4,661,902 US	8 Jul 9 3	no - letter only identifies patents	

802.11	Apple	V. Randall Gard -	see above	24 Jun	yes -	10 Sep
	Computer - continued.	Senior Patent Counsel, tel: 1-408-996-1010		96	grants assurance re: patents Identified In 8 Jul 93 Fetter	97
802.11	Apple Computer, Inc., 1 Infinite Loop, Cupertino CA 95014	Mark Aaker- Attomey, Legal Department, M/S 3-PAT; tel: +1-408-974-4347; fax: +1-408-974-5436; emall: aaker@ apple.com; URL: www.apple.com	5,408,506 U5 5,835,721 US 6,069,887 US	12 Jun 06	yes	12 Jun 06
802.11	Norand Corp 550 Second Street S.E., Cedar Rapids, Towa 52402	Ronald L. Mahaney - Director of Systems Development, tel: 1-319-369-3100, fax: 1-319-369-3453	4, 910, 794 US 5,070,536 US 632,055 Australia 1,316,218 Canada	11 Aug 93: 1 Mar 96; 20 Jun 97	Letter of 20 Jun 97 grants assurances	10 Sep 97
802.11	Digital Ocean 11206 Thompson Avenue, Lenexa, Kansas 66219-2303	Jeffrey J. Alholm - Chief Executive Officer, tel: 1-913-888-3380, fax: 1-913-888-3342	not Indicated	no date	yes	
802.11	Lucent Technologies Suite 200, 150 Allen Road, Liberty Corner, NJ 07938-1995	Gene G. Partiow - Intellectual Property Vice President, tel: 1-908-903-6222, fax: 1-908-903-6321	not indicated	15 Dec 96	yes	
802.11	RSA Data Security, Inc. - 100 Marine Parkway, Redwood City, CA 94065	Paul Gordon - Director of Sales, tel: 1-415-595-8/82, fax: 1-415-595-1873	not indicated	14 Jun 95	yes	
802.11	Victor A. Dorokhin Patentee	Patent Agent: Serge Komaritsky, Director, Commercial Consulting Bureau INTRA, 31/35 TVerskaya- Yamskaya 3rd St., 123056 Moscow, Russia tel: +7-095-251-26-53, fax: +7-095-251-49-96, emall: Intra.com@ g23.relcom.ru	2068579 Russia	29 Jul 98	yes	22 Aug 00
802.11	Toshiba America Inform- ation Systems, Inc. - Legal Department, 9740 Irvine Bivd., P.O. Box 19724, Irvine, CA 92618-1697	David J. Harshman, Assistant General Counsel, tel: 1-714-583-3517, fax: 1-714-587-6235	5,467,341 US	23 Jun 97	Letter grants some assurances but excludes for other patent holders which have or make claims to patents covering such a standard	3 Jun 99
802.11	Nippon Telegraph and Telephone Corp, 20-2 Nishi- shinjuku 3-Chome	Hiroshi Nakayama, Executive Manager Intellectual Proeprty Department, tel: +81-3-5353-4379, fax:+81-3-5353-5517	not indicated	24 Jun 98	ves, with a cross licensing condition	3 Jun 99

	Shinjuku- ku, Tokyo 163-1419 Japan	\$ \$ \$		· · · · · · · · · · · · · · · · · · ·	- door	
802.11	Alantro Communi- cations, Inc. 141 Stoney Circle, Suite 210, Santa Rosa, 95407	Chris Hoogard, CEO, tel: 1-707-521-3060, fax: 1-707-521-3066, email: heegard@ alantro.com	not indicated	1 U Mar 98	yes but electronic copy of letter is not signed	3 Jun 99
802.11	Lucent Tech- nologies 555 Union Boulevard, Room 21E-208AB, Allentown, PA 18103	John T. Dickson, Group President	not Indicated	27.Apr 98	letter notes release of a product which will be covered by the approved Standard, and which will be sold at fair and competitive prices	3 Jun 99
802.11	Corporate Wave Net, Inc., 104 Otts Street, Suite 29, Northboro, MA 01532	David A. Beberman, tel: +1-508-351-9492, fax: +1-508-393-3209, email: cwn1@ world.std.com	not Indicated	8 Mar 02	yes .	16 Oct 02
802.11	Nokia Corp, Keilalahoentle 2-4, FIN 02150, Espoo Finland	Harri Honkasalo Director of IPR, tel: +358-718008000, fax: +358-718034496, email: harri.honkasalo@ nokia.com	09/613952 US PCT/1B01/- 01230 [02/05455 WO]	12 Nov 02	yes	12 Nov 02
802.11	Nokia Corp, Kelfalahoentle 2-4, FIN 02150, Espoo Finland	Harri Honkasalo- Director of IPR, tel: +358-718008000, fax: +358-718034496, email: harri.honkasalo@ nokla.com	5,640,395 US 5,729,534 US 5,729,541 US 5,802,465 US	1 Apr 03	yes [4 separate LoAs]	/ Apr 03
802.11	Nokia Corp, Kelialahoentie 2-4, FIN 02150, Espoo Finland	Harri Honkasalo- Director of IPR, tel: +358-718008000, fax: +358-718034496, email: harri.honkasalo@ nokia.com	US 200201- 60769, WO 20030- 24129, US 200300- 50012, 6,587,680 US WO 01/39538, WO 02/05490	19 Jan 04	yes [4 separate LoAs]	19 Jan 04
802.11-2007	Nokia Corp	Kalle Mollanen -IPR Manager, Joensuunkatu 7, FIN 24101 Salo, Finland, tel: +358-50-366-2022, fax: +358-7180-44275, email: kalle.mollanen@ nokla.com	5,987,137 US 6,118,775 US 6,535,979 US 6,449,473 US 6,587,680 US 6,842,605 US 5,640,395 US 5,729,534 US 5,729,534 US 6,359,904 US 6,675,012 US 6,738,599 US 6,834,045 US 6,081,601 US 1332640 EP, 6,247,150 US 6,501,741 US 6,683,860 US 6,912,402 US 6,683,860 US 6,944,459 US 6,665,280 US 6,747,962 US	29 Jun 07; 1 Oct 07; 18 Des 07; 23 Sep 08; 15 Jun 09; 30 Sep 09; 19 Feb	yes	19 Feb 10

			7,020,438 US 6,487,595 US 6,298,035 US 7,224,677 US 7,006,472 US US 20060067526, US 20070104162, US 20070201467		A control of the cont	
802.11	Nokia Corporation	Kalle Mollanen-IPR Manager, Joensuunkatu 7, FIN 24101 Salo, Finland, tel: +358-50-366-2022, fax: +358-7180-44275, emall: kalle.mollanen@ nokla.com	200600-79241 (US), 7,120,852 (US), US 200602-85517, 7.729,236 (US), US 2006-0018332, 7,751,396 (US), 7,664,008 (US), US 20080-144591, W020090 60275, 7,142,830 (US), US 20080-218271, US 20060-218271, US 20070-060067, 6,636,491 (US), US 2005-0250495, 7,046,651 (US), US200701127478, US20070115865, US2007012883, US20060268802, US20060268746, US20080151814, 8,064,374 (US), US20100008274, US20110149938	1. Oct 10; 11 Oct 10; 21 Dec 10; 31 Mar 11; 23 Sep 11; 92 Hov 11; 21 Dec 11	yes	23 Dec 11
802.11	Fujitsu Limited	Shigeru Kitano-General Manager, Standards Center, Law & Intellectual Property Unit, 1-1. Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa 211-8588, Japan, tel: +81-44-754-3050, fax: +81-44-754-3842, email: kitano. shigeru@ jp.fujitsu.com, URL: www.fujitsu. com/global/	6,018,642 US; 3,629,077 JP	23 Aug 97	yes	10 Sep 07
802.11	CSR, plc	Anne McAleer-Patent Manager, Corporate. Unit 400, Cambridge Science Park, Milton Road, Cambridge, CB4 0WH Great Britain, tel: +44-1223-692818, fax: +44-1223-692001, email: Anne.McAleer@csr.com, URL: www.csr.com	not indicated	6 Mar Ou	yes	.6 Mar 09
802.11	Avaya, Inc., 211 Mt. Ali y Road, Basking Ridge NJ 07920-2332	Eugene Potkay-VP, 1P. Room 3W524, tel: +1-908-953-8640 fax: +1-908-953-3279, email: epotkay@ avaya.com	not indicated	19 Nov . 03	yes	19 Nov 03
802.11-2007	Konink- lijke Philips Electr- onics N.V.	Larry Liberchuk-Senior 1P Counsel, Intellectual Property & Standards, Philips Electronics N.A. Corp., 345 Scarborough	not indicated	11 Jan 10	yes	15 Jan 10

		Road, Briarcliff Manor NY 10510, tel: +1-914-333-9602, email: larry.liberchuk@ philips.com			**************************************	
802.11	Kapsch TrafficCom AG	Oliver Nagy - IP Manager, System Engineering, Am Europiatz 2, A-1120 Vienna, Austria, tel: +43-50811-2402, fax: +43-50811-99-2402, email: oliver.nagy@ kapsch.net	not Indicated	22 Feb 10	yes	23 Feb 10
802.11	Renesas Mobile Corporation	Marja Llisa Auttl-Senior 1PR Manager, Patenting, Porkkalankatu 24, 00180 Helsinkl, Finland, tel: +358405915095, fax: +358947892666, emall: marjallisa.auttl@ renesasmobile.com, URL: www. renesasmobile.com	not indicated	2 Nov 11	yes	3 Nov 11
802.11 802.11a 802.11g	Nokia Corp, Kellalahoentle 2-4, FIN 02150, Espoo Finland	Harri Honkasalo - Director of 1PR, tel: +358-718008000, fax: +358-718034496, email: harri.t. honkasalo@ nokla.com	6,359,904 US 9,909,724 WO	5 Aug 04	yes	6 Aug 04
802.11 [specific mention of 802.11a 802.11b 802.11e 802.11f 802.11g 802.11h 802.11l]	Tele- fonaiebol-aget L M Ericsson Telefonvagen 30, SE-12625 Stockholm, Sweden	Kasim Alfalahi- Licensing Manager, tel: +4687191148, fax: +4687191112, email: kasim.alfalahi@ Ime.ericsson.se	not indicated	29 Jan 03	yes	11 Feb 03
802.11-2007 802.11n 802.11r 802.11ac 802.11ad	Samsung Electronics Co., Ltd.	Min Hyung Chung- Senior Vice President, Intellectual Property Center, 416, Maetan 3-dong, Yeongtong-gu, Suwon si, Gyeonggi-do, 443-742 Korea, tel: +82-31-279-8001, fax: +82-31-279-0514, emall: minh.chung@ samsung.com	not indicated	31 May 11	yes	31 May 11
802.11a	Lucent Tech- nologies, Sulte 2000, 150 Allen Road, P.O. Box 1995, Hiberty Corner, NJ 07938-1995	Roger E. Stricker, Intellectual Property Vice President tel: 1-908-903-6271, fax: 1-908-903-6317	not Indicated	13 Jan 28 29 Apr 98	yes	3 Jun 99
802.11a	CSIRO, Tele- communi- cetions & Industry Physics, Cnr Vimiera & Pembroke Roads, Marsfiled NSW 2122 PO Box 76, Epping	Contact: Denis Redfern-General Manager, CS1RO Business Development and Commercial- Ization, P.O. Box 93, North Ryde, NSW 1670 Australia tel: +61-2-94908261. fax: +61-2-94908164,	5,487,069 US	4 Dec 98	yes	19 Oct 04

	NSW 1710 Australia	email: Denis.Redfern@ csiro.au		and the state of t		
802.11a	Breeze- Com Ltd., Alidim Technology Park, Bidg. 1, Tel Aviv 61131, Israel	Contact: Smadar Shilo, Corporate Counsel tel: +972-3-645-6262 fax: +972-3-645-6290 emall: naftallc@ breezecom.co.il	not indicated	x May 98	yes	3 Jun 99
802.11a	NEC Corp 7-1, 5-chome, Minato-ku, Tokyo 108-01, Japan	Naoki Kyornoto - General Manager Intellectual Property Division	not Indicated	20 Feb 98	yes, with cross- licensing require- ment	3 Jun 9 9
802.11a	RadioLAN, Inc 455 DeGulgne Dr., Sunnyvale CA 94086	Letter from Reza Ahy Contact: Clay Marr; CEO & President, tel: 1-408-524-2600, fax: 1-408-524-0600	not indicated	10 Mar 98	yes	3 Jun 99
802.11a	WiLAN Inc. 300-801 Manning Road, Calgary, Alberta T2E 8J5, Canada	Hatim Zaghloul, President & CEO tel: 1-403-273-9133, fax: 1-403-273-5100, emall: zaghloul@ wl-lan.com	not indicated	/ Jul 98; 9 Nov 98	yes	3 Jun 99
802.11a	Philips Semicon- ductors, PO Box 3409, 811 E Arques Ave, Sunnyvale CA 94088-3409	Kursat Kimyacloglu, Manager- Product Une, Wireless Connectivity, tel: +1-408-991-4851, fax: +1-408-474-7247, emall: kursat. kimyacloglu@ philips.com	not indicated	30 Jun 00	yes	
802.11a	Hitachi, Ltd., New Marunouchi Bldg., 5-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8220, Japan	Mr. Hironori Seki, General Manager-IP Licensing Department, Intellectual Property Group, tel: +81-3-5223-4532, fax: +81-3-3214-3146, emall: seki@ hq.lpg.hitachi. co.cp	2989742 Claim 8 {Japan}	1 Nov 02	yes	1 Nov 02
802.11a	France Telecom, 38-40 rue du General Leclerc, F-92794 Cedex 9 Issy Les Moulineaux, France	Mr. Luc Savage- Intellectual Property and Licensing Director, FT/RD/PIV, tel: +33145296158, fax: +33145296560, email: luc.savage@ orange- ftgroup.com	FR 2658017, GB 0441730, US 5228025, DE 69114733, US 4881241, DE 6911-0716.5, FR 2660131, GB 0448492, US 5197061, US RE 36,430, DI 69232580, ES 0820172, GB 0820172, NL 0820172, NL 0820172, CA 2059455, GB 0499560, AU 655959, EP 0499560, EP 0820172, FR 2671923, US 5307376, DE 0499560, JP 3044899	16 Nov . 04	yes	22 Jul 10
802.11a	France Telecom, 38-40 rue du General Leclerc,	Mr. Luc Savage- Intellectual Property and Licensing Director,	FR 0594505, GB 0594505, FR 2697395, EP 0594505, DE	16 Feb 06; 28 Feb 06	yes	22 Jul 10

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	9 Issy Les	tel: +33145296158,	2604316, SE			į.	
	Moulineaux,	fax: +33145296560,	0296175, IT				
1	France	email: luc.savage@	0296175, US 4881241, NL	4			
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802.11a	TDF, 1 rue Marconi,	Pascal Scomazzon-TP Manager,	DE 6911- 0716.5, FR	10 Jan 05	yes	05	
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802.11a	TDF, 1 rue Marconi,	Pascal Scomazzon-1P Manager, Prospection &	EP 0448492, FR 2660131, DE	2 Aug 06	yes	7 Aug 06	
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	CEDEX 3,	+33387207588,	0448492, FR				
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802.11a	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron. bernstein@ symbol.com, URL: www. symbol.com	not ≀ndicated	11 Apr Ω6	yes	24 Jul 06
802,11a	Fujitsu Limited	Shigeru Kitano-General Manager, Standards Center, Law & Intellectual Property Unit, 1-1. Kamikodanaka 4-chorne, Nakahara-ku, Kawasaki, Kanagawa 211-8588, Japan, tel: +81-44-754-3050, fax: +81-44-754-3842, email: kitano.shigeru@ jp.fujitsu.com, URL: www.fujitsu. com/ global/	2,097,948 JP	2 <u>C Sep</u> 92	yes	24 Sep 07
802.11a	Panasonic Corp	Takeshi Goto-Sentor Coordinator, Panasonic Corp, IPR Operation Company, 2-1-61 Shiromi, Chuo ku, Osaka City, 540-6207 Japan, tel: +81-6-6949-4525, fax: +81-6-6949-4545, email: goto.takeshi@ jp.panasonic. com	7,146,092 US 6,608,843 US 6,608,868 US 6,748,023 US 6,738,430 US 6,993,092 US 7,359,457 US 7,069,489 US 7,328,389 US 3,154,709 JP, 3,980,017 JP, 3,997,890 JP, EP1022874, EP1617613	6 Mar 02; 6 Mar 02; 24 Jul 09	yes	24 Jut 09
802.11a	Thomson Licensing	David W. Herring-Director Licensing In, Intellectual Property and Licensing, 2 Independence Way, Suite 110, Princeton NJ 08540, tel: +1-609-734-6855, fax: +1-609-734-6885, email: david.herring@technicolor.com	EP 0439539 B1, US 5311550	<u>6 Oct</u>	yes	7 Oct 11
802.11a/ 802.11b	Micrilor, Inc. Signal Processing Tech- nology 17 Lakeside Office Park, Wakefield, MA 01880	Dr. Stanley Reible, Vice President tel: 1-781-246-0103, fax: 1-781-246-0157	not indicated	30 Jan 98	yes	3 Jun 99
802.11b	Golden Bridge Tech-	Feliciano Giordano. President,	not indicated	3 Mar 98	yes electronic	3 Jun 99

	nology, Inc 185 Route 36, West Long Branch, NJ 07764	tel: 1-732-870-8088, fax: 1-732-870-9008			copy of letter is not signed	
802.11b	Golden Bridge Tech- nology, Inc., 198 Brighton Avenue, Long Branch, NJ 07740	Mimi Hsu, IP Development, tel: +1-732-870-8088, fax: +1-732-870-9008, email: mhsu@ gbtwireless.com	05956369 US 06349110 US	26 Jul 04	yes	26 Jul 04
802.11b	Kokusai Denshin Denwa Co., Ltd. 2-3-2, Nishishinj- yuku, Shinjyuku- ku, Tokyo 163-03, Japan	Kenichi Kawaguchi, Director Network Planning Department, Network Headquarters, tel: +81 3 3347 7100, fax: +81 3 3347 6362	not indicated	3 Mar 98	yes	3 Jun 99
802.11b	Lucent Tech- nologies, Suite 2000, 150 Allen Road, P.O. Box 1995, Liberty Corner, NJ 07938-1995	signed bt Eugene Pothay? for Roger Stricker, PhD Intellectual Property Vice President, Contact: Mr. P.J. Crefeld tel: 1-908-903-6262, fax: 1-908-903-6319	not indicated	2.101.98	yes - subject to recipro- cation	3 Jun 99
802.11b	Raytheon Electro- nics, Micro- electronics, 362 Lowell Street, Andover, MA 01810	Richard L. Winer Mananger of Contracts Microelectronics and Commercial Electronics Group	no patents	11 Mar 98	no patents	3 Jun 99
802.11b	WILAN Inc. 300-801 Manning Road, Calgary, Alberta T2E 835, Canada	Hatim Zaghloul, President & CEO, tel: 1-403-273-9133, fax: 1-403-273-5100, email: zaghlout@ wi-lan.com	not indicated	/ Jul ១៩; 14 Sep ១ខ	Assurances granted but withdrawn in 14 Sept letter to the extent that 7 July letter implies US Pat 5,555,268 Is necessary to conform with standard	3 Jun 99
802.11b	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1 631 738 4110, email: aaron. bernstein@symbol.com, URL: www.symbol.com	not indicated	11 Apr Ob	yes	24 Jul 06
802.11e	Texas Instru- ments, Inc., P.O. Box 655474, M/S 3999, Dellas, TX 75265; 7839 Churchill Way, M/S 3999, Dallas, TX 75251	Letter from & signed by: E. Earle Thompson, Sr. Counsel, Texas Instruments, tel: +1-972-917-5557, email: e-thompson@ ti.com	not indicated	16 Jan 01	yes	

802,11e	AT&T Labs, 180 Park Avenue, PO Box 971, Florham	T. Frost, Room 2E37, Building 104, 180 Park Avenue, PO Box 971,	not indicated	15 Jan 91	yes - one for TCMA and one [royalty-	
	Park NJ 07932	Florham Park NJ 07932; letter signed by R. Calderbank, Director- Information Sciences Research			free) for PCF	
802.11e	AT&T Corp., 180 Park Avenue, Bldg 104 Room 2E37, Florham Park NJ 07932	Thomas F. Frost, Intellectual Property Management, phone: +1-973-236-6760, fax: +1-973-236-6452, email: tfrost@att.com	pending applications	9 Nov 01	yes	12 Nov 01
802.11e	Atheros Communi- cations, Inc., 529 Almanor Avenue, Sunnyvale CA 94085	Adam Tachner, Intellectual Property Counsel, tel: +1-408-773-5296, fax: +1-408-773-9909 email: atachner@ atheros.com	not indicated	14 Mar 01	yes, plus one {reyalty- free} for VDCF technique	
802.11e	Sharp Corp, 22-22 Nagaike-cho, Abeno-ku, Osaka, 545-8522 Japan	Haruyasu Sasaki, Group Manager- Intellectual Property, email: sasaki. haruyasu@ sharp.co.jp	not indicated	3 Jul 01	yes	23 Jul 01
802.11e & 802.11	Phillip Rogaway, Associate Professor, Dept. of Computer Science, University of Capadia, Davis, CA 95616	email: rogaway@ cs.ucdavis.edu	not indicated	3 May 01	yes	23 Jul 01
802.11e	Philips Semicond- uctors, Inc., Prof. Holstlaan 6, 5656 AA Eindhoven, PO Box 220, 5600 AE Eindhoven, The Netherlands	Mr. Huub Beokers- Patent Licensing Director, Philips Intellectual Property & Standards	not indicated	12 Mar 02	yes	18 Mar 02
802.11e	Intersil Corp, 2401 Palm Bay Road NE, Palm Bay Ft 32905	Paul Bernkopf Chief IP Counsel, tel: +1-321-729-4715; email: pbernkop@ intersil.com	10/353391 [US patent application]	1 Jul 02; updated 4 Apr 03	yes	21 Apr 03
802.11e	Broadcom Corp, 16215 Alton Parkway, PO Box 57013, Irvine CA 92619-7013	James D. Bennett- Director of Intellectual Property, tel: +1-949-450-8700, fax: +1-949-450-8710	not indicated	6 Sep 02	yes	16 Oct 02
802.11e	Trapeze Networks, 5753 W Las Positas Bivd, Pleasanton CA 94588	Dan Creager Chief Financial Officer, tel: +1-925-474-2206, fax: +1-925-251-0642, email: danc@ trapezenetworks. com	not indicated	7 Nov 02	yes	7 Nov 02
802.11e	Agere Systems, Inc., 1110 American Parkway NE,	Viren M. Pathare- Manager, Licensing IP, Room 12C-347,	5,422,887 US 5,329,531 US 10/092,295 US 10/368,018 US	4 Sep 03	yes	5 Sep 03

	Allentown PA 18109	tel: +1-610-712-6906, fax: +1-610-712-3467, email: pathare@ agere.com	09/859,334 US			
802.11e	Motorola, Inc., 1303 E Algonquin Road, Schaumburg IL 60196	Jonathan Retsky, VP & Director of Patent Operations, Motorola Corporate Law Dept., tel: +1-847-538-3485, fax: +1-847-576-3750, email: jonathan. retsky@ motorola.com	not indicated	15 Sep 03	yes	17 Sep 03
802.11e	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, emall: standards-lpr@ clsco.com	not indicated	20 Sep 03; 20 Sep 06	yes	12 Jul 07
802.11e	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron.bernstein @ symbol.com, URL: www. symbol.com	not indicated	11 Api 06	yes	24 Jul 06
802.11e	Panasonic Corp	Takeshi Goto-Senior Coordinator, Panasonic Corp, IPR Operation Company, 2-1-61 Shiromi, Chuo-ku, Osaka City, 540-6207 Japan, tel: +81-6-6949-4525, fax: +81-6-6949-4545, email: goto.takeshi@ jp.panasonic.com	1,744,585 EP, 4,065,393 JP	6 Mar 09; 6 Mar 09	yes	9 Mar 9
802.11e	Electronics and Telecomm- unications Research Institute	Joong-won Cho, Patent Counsel, Intellectual Property Management Tearn, 138 Gajeongno, Yuseong-gu, Daejeon 305 700 Korea, tel: +82-42- 860 -0757, fax: +1-82-42-860-3831, emall: won@ etri.re.kr, URL: www.etrl.re.kr	not indicated	23 Dec 02	yes	23 Dec 09
802.11F	Trapeze Networks, 5753 W Las Positias Blvd, Pleasanton CA 94588	Dan Creager Chief Financial Officer, tel: +1- 925- 474- 2206, fax: +1-925-251-0642, email: danc@ trapezenetworks.com	not indicated	7 Nov 02	yes	7 Nov 02
802.11F	Agere Systems Inc., 1100 American Perkway NE, Allentown PA 18109	Caroline D. Liott- Manager, Licensing Intellectual Property, Room 12C-350, Lei: +1-610-712-3474, fax: +1-610-712-3467, email: cliott@	5,371,738 US 5,636,217 US	30 Jan 03	yes	3 Feb 03
	1.	agere.com				

802.11F	Senforce Tech- nologies, Inc., 147 West Election Road, Suite 110, Draper UT 84020	Scott Richards, VP-Product Management & Engineering, tel: +1-801-838-7878, fax: +1-801-838-7879, email: srichards@ senforce.com, URL: www.senforce.com	not Indicated	7 NOV 06	yes	7 Nov 06
802.11g	Supergold Communi- cation Ltd, c/o Sandyford Village, Sandyford, Dublin 18, Ireland	Colum Caldwell, CEO, tel: +353-1-677-9555, fax: +353-1-677-9642, emall: colum.caldwell@ supergold.com	not indicated	12 Mar 01	yes	The state of the s
802.11g	Texas Instru- ments, Inc., P.O. Box 655474, M/S 3999, Dallas, TX 75265; 7839 Churchill Way, M/S 3999, Dallas, TX 75251	Letter from & signed by: E. Earle Thompson, Sr. Counsel, Texas Instruments, tel: +1-972-917-5557, email: e-thompson@ti.com	not Indicated	16 Jan 01	yes, plus one [royalty- free] for TGg High Rate Standard	
802.11g	Wi-LAN Inc., 300 - 801 Manning Road NE, Calgary Alberta, Canada TZE 835	Hatim Zaghloul, President & CEO, tel: +1-403-273-9133, fax: +1-403-273-5100, email: hatimz wilan.com	not indicated	29 Nov 00	yes	
802.11g	Intersil Corp, 2401 Palm Bay Road, Palm Bay FL 32905	Paul Bernkopf, Chief 1P Counset, tel: +1-321-/29-4/15, emall: pbernkop@ intersil.com	10/295596, 60/440576, 60/41/054, 60/423813 [US patent applications]	1 Jul 02; updated 4.Apr 03	yes	21 Apı 03
802.11g	Philips Semicond- uctors, Inc., PO Box 3409, 811 E Arques Ave, Sunnyvale, CA 94088-3409	Michael Schmitt, Principal Attorney, Philips Corporate Intellectual Property, 580 White Plains Rd, Tarrytown, NY 10591, tel: +1-914-332-0222	not indicated	21 Jun 01	yes	29 Jun 01
802.11g	Broadcom Corp, 16215 Alton Parkway, PO Box 57013, Irvine CA 92619-7013	James D. Bennett- Director of Intellectual Property, tel: +1-949-450-8710 fax: +1-949-450-8710	not indicated	6 Sep 02	yes	16 Oct 02
802.11g	Agere Systems, Inc., 1110 American Parkway NE, Room 12C-350, Alientown PA 18109	Caroline D, Liott-Manager, Licensing, Intellectual Property, tel: +1-610-712-3474, fax: +1-610-712-3467; emall: cliott@ agere.com	5,151,920 US 5,546,420 US 5,706,428 US 5,751,739 US 5,862,182 US 6,404,732 US 6,452,958 US 6,563,786 US 10/092,295 US [corresponds to EP patent application 615,363]	24 Jan 03, updated 13 Fcb 07	yes	21 Feb 07
802.11g	Atheros Communi- cations, Inc., 529 Almanor Avenue, Sunnyvale CA 94085	Adam Tachner-1P Counsel, tel: +1-408-773-5200, fax: +1-408-773-9909, email legal@ atheros.com	not indicated	1 May 03	yes	2 May 03
802.11g	France Telecom, 38-40 rue du General Leclerc,	Mr. Luc Sayage- Intellectual Property and Licensing Director,	FR 2658017, GB 0441730, US 5228025, DE 69114733, US	16 Nov 04	yes	22 Jul 10

	F-92794 Cedex 9 Jssy Les Moulineaux, France	FT/RD/PIV, tel: +33145296158, fax: +33145296560, email: luc.savage@ orange-ftgroup.com	4881241, DE 69110716.5, FR 2660131, GB 0448492, US 5197061, US Re 36,430, DE 69232580, ES 0820172, GB 0820172, NL 0820172, NL 0820172, CA 2059455, GB 0499560, AU 655959, EP 0820172, FR 2671923, US 5307376, DF 0499560, JP 3044899			
802.11g	France Telecom, 38-40 rue du General Leclerc, F-92794 Cedex 9 Issy Les Moulineaux, France	Mr. Luc Savage- Intellectual Property and Licensing Director, FT/RD/PIV, tel: +33145296158, fax: +33145296560, email: luc.savage@ orange- ftgroup.com	FR 0594505, GB 0594505, FR 2697395, EP 0594505, DE 0594505, FR 2604316, SE 0296175, US 4881241, NL 0296175, US 1-500792, FR 2601210, EP 0296175, DE 0296175, GB 0296175, WO 4881241, FR 2658017, EP 0441730, DE 69114733, US 5228025, GB 0441730, EP 0448492, FR 2660131, DE 0448492, FR 2671923, JP 5-75568, GB 0499560, EP 0820172, EP 0820172, DE 0820172, DE 0820172, SE 0820172, SE 0820172, SE 0820172, SE	28 Feb 06	yes	22 Jul 10
802.11g	TDF, 1 rue Marconi, F-57078 Metz CEDEX 3, France	Pascal Scomazzon- 1P Manager, tel: +33387207588, fax: +33387763363, emall: pascal. scomazzon@ tdf.fr	DE 69110716.5, FR 2660131, GB 0448492, US 5197061, US Re 36430, FR 2658017, GB 0444730, US 5228025, DE 69114733, US 4881241, DE 69232580, ES 0820172, GB 0820172, NL 0820172, NL 0820172, CA 2059455, GB 0499560, AU 655959, EP 0499560, FP 0820172, FR 2671923, US 5307376, DE 0499560, JP 3044899	10 Jan 05	yes	31 Jan 05

802.11g	TDF, 1 rue Marconi, F-57078 Metz CEDEX 3, France	Pascal Scomazzon- IP Manager, Prospection & Valorisation, tel: +33387207588, fax: +33387763363, email: pascal. scomazzon@ tdf.fr	EP 0448492, FR 2660131, DE 0448492, GB 0448492, FR 2658017, EP 0441730, DE 69114733, US 5228025, GB 0441730, FR 2671923, JP 5-75568, GB 0499560, EP 0499560, IT 0820172, DE 0820172, DE 0820172, NL 0820172, SE 0820172, SE 0820172, SE 0820172, SE 0820172, SE 0820175, IT	2 Aug 06	yes	7 Aug 06
			0296175, US 4881241, NL 0296175, JP 1-500792, FR 2601210, EP 0296175, DE 0296175, GB 0296175, WO 4881241, FR 2604316, FR 0594505, GB 0594505, FR 2697395, EP 0594505, DE 0594505			
- 802.11g	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein- VP & Deputy General Counsel, tegal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron. bernstein@ symbol.com, URL: www. symbol.com	not indicated	11 Apr 05	yes	24 Jul 06
802.11g	Fujitsu Limited	Shigeru Kitano-General Manager, Standards Center, Law & Intellectual Property Unit, 1-1. Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa 211-8588, Japan, tel: +81-44-754-3050. fax: +81-44-754-3842, email: kitano.shigeru@ jp.fujitsu.com, URL: www.fujitsu.com/ global/	2,097,948 JP	2C_Sep 97	yes	24 Sep 07
802.11g	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal - Intellectual Property, tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-ipr@ cisco.com	not Indicated	11 Dec 97	yes	12 Dec 07
802.11g	Thomson Licensing	David W. Herring Director Licensing In. Intellectual Property	EP 0439539 B1, US 5311550	<u>6.0a</u> 11	yes	7 Oct

n de de la companie d		and Licensing, 2 Independence Way, Suite 110, Princeton NJ 08540, tel: +1-609-734-6855, fax: +1-609-734-6885, email: david.herring@ technicolor.com			a a a a	
802.11h	Philips Semicond- uctors, Inc., PO Box 3409, 811 E Arques Ave, Sunnyvale, CA 94088-3409	Michael Schmitt, Principal Attorney, Philips Corporate Intellectual Property, 580 White Plains Rd, Tarrytown, NY 10591, tel: +1-914-332-0222	not indicated	21.7un 01	yes	29 Jun 01
802.11h	Broadcom Corp, 16215 Alton Parkway, PO Box 57013, Irvine, CA 92619-7013	James D. Bennett, Director of Intellectual Property, tel: +1-949-450-8700, fax: +1-949-450-8710	2 letters: one general and one related to submission 802.11/ 01-217	10 Jul 91	yes	23 Jul 01
802.11h	Agere Systems, Inc., 1100 American Parkway NE, Allentown PA 18109	Viren M. Pathare, Manager- Licensing & IP, Room 12C-347, tel: +1-610-712-6906, fax: +1-610-712-3467, email: pathare@ agere.com	not indicated	<u>9 May</u> 03	yes	13 May 03
802.11h	Atheros Communi- cations, Inc.	Bernice B. Chen- Director of IP, Legal, 5480 Great America Parkway, Santa Clara CA 95054, tel: +1-408-830-5/24, fax: +1-408-773-9909, email: bernice@ atheros.com, URL: www. atheros.com	not Indicated	24 Jul 07	yes	24 Jul 07
802.11‡	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang - Director, Patents & Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-ipr@ clsco.com	not indicated	10 Jan 02	yes	12 Jul 07
802.111	VDG Inc., 6009 Brookside Drive, Chevy Chase MD 20815	Dr. Virgil D. Gilgor- President, phone: +1-301-657-1959	pending applications	21 Jan	yes	25 Jan 02
802.111	Intensil Corp, 2401 Palm Bay Road NE, Palm Bay FL 32905	Paul Bernkopf- Chief IP Counsel, phone: +1-321-729-4715; email: pbernkop@ Intersil.com	10/424803 US	1 Jul 02; updated 4 Jun 03	yes	16 Jun 03
802.111	Trapeze Networks, 5753 W Las Positas Blvd, Pleasanton CA 94588	Dan Creager-Chief Financial Officer, tel: +1-925-474-2206, fax: +1-925-251-0642, email: danc@ trapezenet works.	not indicated	7 Nov 02	yes	7 Nov 02
802.11i	Agere Systems, Inc., 1100 American Parkway NE, Allentown PA 18109	Caroline D. Liott-Manager, Licensing & IP, Room 12C-350, tel: +1-610-712-3474, fax: +1-610-712-3467, emall: cliott@	not indicated	1 Apı 03	yes	7 Apr G3

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802.11)	IBM Corp, North Castle Drive, Armonk NY 10504	Gerald T. Lane- Director of Standards, Intellectual Property & Licensing, tel: +1-914-765-4369, fax: +1-914-765-4330, email: gtlane@us.lbm.com	5,673,318 US	7 May 03	yes	7 May 03
802.111	Symbol Tech- nologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein -VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055, fax: +1-631-738-4110, email: aeron. bernstein@ symbol.com, URL: www. symbol.com	not Indicated	11 Apr 06	yes	24 Jul 06
802.111	Toshiba Corp	Masayuki Miyanaga-Group Manager, Intellectual Property Group, Research Planning Office, Corporate Research & Development Center, 1, Komukal-Toshiba-cho, Salwal-ku, Kawasaki, 212-8582, Japan, tel: +81-44-549-2055, fax: +81-44-549-2055, fax: +81-44-549-2055, toshiba. co.jp, URL: www. toshiba.co.jp	not Indicated	25.Qct Q2	yes	29 Oct 07
802.11i	Juniper Networks, Inc.	Scott Coonan- Director of IP Litigation and Licensing, Legal, 1194 N. Mathilda Avenue, Sunnyvale CA 94089, tel: +1-408-936-4072, fax: +1-408-747-4278, ermall: scoonan@ juniper.net	12/350,649	5 Aug 02	yes	6 Aug 09
802.11i	Electronics and Tele- comm- unications Research Institute	Joong won Cho, Patent Counsel, Intellectual Property Management Team, 138 Gajeongno, Yuseong-gu, Daejeon 305-700 Korea, tel: +82-42-860-0757, fax: +1-82-42-860-3831, email: jjwon@ j etrl.re.kr, URL: www. etrl.re.kr	not indicated	23 Dec 99	yes	23 Dec 09
802.11k	Philips Semicond- uctors, Inc. 1000 W Maude Avenue, Sunnyvale CA 94085-2810	Michael Schmitt, Principal Attorney. Philips Corporate Intellectual Property, 580 White Plains Rd, Tarrytown, NY 10591, tel: +1-914-332-0222	not indicated	21 Apr 03	yes	30 Apr 03
802.11k	Trapeze Networks,	Dan Creager-Chief Financial	not Indicated	2 Jun 93	yes	3 Jun 03

	5753 W Las Positas Blvd, Pleasanton CA 94588	Officer, tel: +1-925-474-2206, fax: +1-925-251-0642, email: danc@ trapezenetworks.				
802.11k	Motorola, 1303 E. Algonquin Road, Schaumburg IL 60196	Latonia Gordon- Intellectual Property Licensing, tel: +1-847-576-3055, fax: +1-847-538-3666, email: latonia.gordon@ motorola.com	not Indicated	21 Apr 05	yes	6 May 05
802.11k	IPR Licensing, Inc., 3411 Silverside Road, Concord Plaza-Sulte 105, Hagley Bldg, Wilmington DE 19810	Donald M. Boles-VP & Chlef Patent Counsel, tel: +1-610-878-7865, fax: +1-610-878-7844, email: donald.boles@ interdigital.com	not Indicated	31 May 05	yes	31 May 05
802.11k	Interdigital Tech- nology Corp, 3411 Silverside Road, Concord Plaza-Suite 105, Hagley Bidg, Wilmington DE 19810	Donald M. Boles-VP & Chief Patent Counsel, tel: +1-610-878-7865, fax: +1-610-878-7844, emall: donald.boles@ interdigital.com	not Indicated	31 May 05	yes	31 May 05
802.11k	AutoCell Labor- atories, 125 Nagog Park Drive, Acton MA 01720	Paul Callahan- Director of Licensing, tel: +1-978-264-4884, fax: +1-9/8-264-0/66, email: pcallahan@ autocell.com, URL: www. autocell.com	not indicated	14 Oct 05	yes	14 Oct 05
802.11k	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-lpr@ clsco.com	not Indicated	7.Apr <u>06</u>	yes	12 Jul 07
802.11k	Intel Corp, 5200 NE Elam Young Parkway, MS JF2-98, Hillsboro OR 97124	ATTN: Standards Licensing Department, tel: +1-503-712-3397, fax: +1-503-264-2769, emall: standards. licensing @intel.com, URL: www.intel.com/ standards/ licensing.htm	not specified	12 May 06	yes	15 May 06
802.11k	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, emall: aaron. bernsteln@ symbol.com, URL: www. symbol.com	not Indicated	11 Apr 06	yes	24 Jul 06
802.11k	Broadcom Corp, 8303 Mopac Expressway North, Suite A410, Austin	H. Shannon Tyson- Director of IP-Standards, Legal Dept., tel: +1-512-651-9542. fax: +1-512-651-9537,	not Indicated	30 Dec 06	yes	1 Jan 7

	TX 78759	email: styson@ broadcom.com				
802.11k	Qualcomm Inc., 5775 Morehouse Drive, San Diego CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1-858-658-2502, email: trouse@ qualcomm.com, URL: www.qualcomm. com	not indicated	03 Jul QZ	γes	7 Jul 07
802.11k	Research in Motion	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, emall: brivers@ rim.com	not Indicated	25 Jun 92	yes, blanket	17 Jul 07
802.11k	Toshiba Corp	Masayuki Miyanaga-Group Manager, Intellectual Property Group, Research Planning Office, Corporate Research & Development Center, 1, Komukal- Toshiba-cho, Salwal-ku, Kawasaki, 212-8582, Japan, tel: +81-44-549-2055, fax: +81-44-520-1303, email: masayuki. miyanaga@ toshiba.co.jp, URL: www. toshiba.co.jp	not indicated	25 Oct 977	yes	29 Oct 07
802.11k & 802.11r	Airespace, Inc., 110 Nortech Parkway, San Jose CA 95134	Gene Yoon-General Counsel, tel: +1-408-635-2000, fax: +1-408-635-2020, email: gyoon@ airespace.com	not Indicated	9 Sep 04	yes	9 Sep 04
802.11mb	Research in Motion Limited	Brian Rivers- VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N21 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rlm.com	not Indicated	25 Jun 07	yes, blanket	17 Jul 07
802.11n	Cisco Systems, Inc., 170 West Tasman Drive, San lose CA 95134	Dan Lang- Director, Patents and Standards 1PR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-ipr@ clsco.com	5,809,422 US 6,006,110 US 6,101,399 US 6,144,711 US 6,158,041 US 6,192,026 US 6,219,561 US 6,377,631 US 6,442,130 US 6,442,130 US 6,452,981 US 6,463,096 US 6,487,523 US 6,621,872 US 6,654,921 US pending applications; blanket LoA	16 Jan 04; 20 Sep 06	yes	12 Jul

802.11n	Sanyo Electric Co., Ltd., 1-18-13 Hashiridani, Hirakata City, Osaka 573-8534,	Nagatoshi Sugihara- General Manager, IP Dept, Technology R&D Headquarters, tel: +011-81-72-841-7882,	not Indicated	12 Mar <u>04</u>	yes	15 Mar 04
	Japan	fax: +011-81-72-841-7872, email: n_sugihara@. rd.sanyo.co.jp		Commission of the second of th		
802.11n	Agere Systems Inc., 1100 American Parkway NF, Allentown PA 18109	Viren M. Pathare Manager, Licensing IP, Room 12C- 347, tel: +1-610-712-6906, fax: +1-610-712-3467, email: pathare@ agere.com	not indicated	13 Sep 04	yes	13 Sep 04
802.11n	Philips Semicond- uctors, Inc. 1000 W Maude Avenue, Sunnyvale CA 94085-2810	Michael Schmitt, Principal Attorney, Philips Corporate Intellectual Property, 580 White Plains Rd, Tarrytown, NY 10591, tel: +1-914-332-0222, email: michael.schmitt@ philips.com	not indicated	12 Aug 04	yes	17 Sep 04
802.1111	QUAL- COMM Inc., 5775 Morehouse Drive, San Diego, CA 92121-1714	Louis M. Lupin-Senior VP, General Counsel, Legal Department, tel: +1-858-587-1121, fax: +1-858-658-2503, emall: llupin@ qualcomm.com	not indicated	20 Oct 04	yes	21 Oct 04
802.11n	France Telecom, 38-40 rue du General Leclerc, F-92794 Cedex 9 Issy Les Moulineaux, France	Mr. Luc Savage- Intellectual Property and Licensing Director, FT/RD/PIV, tel: +33145296158, fax: +33145296560, email: (uc.savage@ orange- ftgroup.com	DE 0511141, GB 0511141, GB 0735696, DE 69231938.7, FR 2675971, HK 1007841, US 5446747	16 Nov 04	yes	22 Jul 10
802.11n	TDF, 1 rue Marconl, F-57078 Metz CEDEX 3, France	Pascal Scomazzon-IP Manager, tel: +33387207588, fax: 13387763363, email: pascal.scomazzon @tdf.fr	DE 0511141, GB 0511141, GB 0735696, DE 69231938.7, FR 2675971, HK 1007841, US 5446747	10 Jan 05	yes	31 Jan 05
802.11n	Nortel Networks Limited, 2221 Lakeside Blvd, Richardson TX 75082	Mark Hearn, IP Licensing, M/S 991/14/B20, fax: +1-972-684-3888	7,061,854 US 11/665,171 US 11/393,622 US 2006-0242534, 6,891,897 US	16 Dec 04; 14 Mar 06; 26 Apr 06; 18 Apr 07; 29 Jan 10	yes	30 Jan 10
802.11n	Motorola, 1303 E. Algonquin Road, Schaumburg IL 60196	Latonia Gordon- Intellectual Property Licensing, tel: +1-847-576-3055, fax: +1-847-538-3666, email: latonia.gordon@ motorola.com	not indicated	12 Jan Q5	yes	12 Jan 05
802.11n	Intel Corp, 2200 Mission College Blvd, Santa Clara CA	Office of General Counsel, tel: +1-408-765-1859, fax: +1-408-765-1125,	not Indicated	12 Jan 05	yes	13 Jan 05

	95052	email: standards.licensing @Intel.com				
802.11n	Toshiba Corp, 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan	Taisuke Kato, Intellectual Property Division, tel: +81-3-3457-2500, fax: +81-3-5444-9213, email: taisuke.kato@ toshiba.co.jp, URL: www. toshiba.co.jp	not Indicated	4 Apr 05	yes	21 Apr 05
907 11n	ATRT Com	Joseph M. Commer.	6.019.539	3 Mou	vae.	8 Sen
802.11n	AT&T Corp., 180 Park Avenue, Florham Park NJ 07932	Joseph M. Sommer- Executive Director, Patent Licensing & Sales: Broadband, AT&T Intellectual Property Organization, Bidg. 103, tel: +1-973-236-6300, fax: +1-973-360-5800, email: jmsommer@ att.com, URL: www.att.com/ attlabs/products	6,018,528, 6,064,662, 6,088,408, 6,115,427, 6,127,971, 6,178,196, 6,430,231, 6,473,393, 6,549,585, 6,584,593, 6,584,593, 6,587,515, 6,618,454, 6,661,856, 6,693,982, 6,760,593, 6,804,312, 6,842,491, 6,870,882, 6,889,335, 6,891,903, 6,185,258, 6,775,329, 7,120,200	3 Nov 05; 3.Sep 08	yes	8 Sep 08
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802.11n	Hughes Network Systems, LLC, 11717 Exploration Lane, Germantown, MD 20876	General Counsel, Legal Dept. tel: +1-301-601-7315, fax: +1-301-428-2818, email: dmanson@hns.com	not Indicated	15 Dec 05	yes	19 Dec 05
802.11n	STMicro- electro- nics, Inc., 1310 Electronics Drive, Carrollton TX 75006	Lisa K. Jorgenson-Vice President, IP & Licensing, tel: +1-972-466-7411, fax: +1-972-466-7044, email: Ilsa. jorgenson@ st.com	not indicated	20 Dec 05	yes	21 Dec 05
802.11n	Airgo	David R. Johnson-Chief	not indicated	11 May	VPS	16 May
	Networks, Inc., 900 Arastradero Road, Palo Alto CA 94304	Operating Officer, tel: +1-650-475-1912, fax: +1-650-475-1708, email: drj@ airgonetworks.com, URL: www. airgonetworks.com	not Indicated	11 may	yes	06
802-11n	Symbol Technologies, Inc. One Symbol Plaza, Hoffsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. Ms: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron. bernsteln@ symbol.com, URL: www.symbol.com	not indicated	11.Apr 05	yes	24 Jul 06
802.11n	Broadcom Corp, 8303 Mopac Expressway North, Austin TX 78759	H. Shannon Tyson, Director of Intellectual Property- Standards, Suite A410. tel: +1-512-651-9542. fax: +1-512-651-9537, email:	not indicated	17 Oct 96	yes	17 Oct 06

		styson@ broadcom.com				
802,11n	Huawei Tech- nologies Co., Ltd.	Director of Licensing, Intellectual Property Dept., Administration Bidg, Huawel CampUS Longgang District, Shenzhen, 518129 P.R. China, tel: +86-755-28787136, fax: +86-755-28787222, email: licensing@huawel.com, URL:: www.huawel.com	not indicated	6 Jan 9.7	yes	9 Jan 07
802.11n	Aware, Inc.	Kevin T. Russell-VP & General Counsel, 40 Middlesex Tumpike, Bedford MA 01730, tel: +1-781-687-0335, fax: +1-781-687-0430, emall: krussell@ aware.com, URL: www.aware.com	not Indicated	02 Feb 02	yes	2 Feb 07
802.11n	Research in Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3WB Canada, Lel: +1-519-888-7465, fax: +1-519-883-4914, emall: brivers@rlm.com	not Indicated	25 Jun 02	yes, blanket	17 Jul 07
802.11n	Sony Corp	Toru Ito-Senior Manager, IP Alliance & Licensing Department, 1-7-1 Kunan Minato-ku, Tokyo, 108-0075 Japan, tel: +81-3-6748-3505, fax: +1-81-3-6748-3544, email: toru.ito@ Jp.sony.com, URL: www.sony.co.jp	not Indicated	9 Jul 02	yes	23 Jul 07
802.11n	Atheros Communi- cations, Inc.	Bernice B. Chen- Director of IP, Legal, 5480 Great America Parkway, Santa Clara CA 95054, Lei: +1-408-830-5724, fax: +1-408-773-9909, email: bernice@ atheros.com, URL: www.atheros.	not indicated	24 Jul	yes	24 Jul 07
802.11n	Electronics and Tele- comm- unications Research Institute	Jung-hyuk Shin, Team Leader, Intellectual Property Management Team, 138 Gajeongno, Yuseong-gu, Daejeon 305-700 Korea, tel: +82-42-860-0720, fax: +1-82-42-860-3831, email: jhshin@ etrl.re.kr, URL: www.etrl.re.kr	not indicated	36 Nov 07	yes	30 Nov 07

802.11n	Inter- Digital Tech-	Bruce G. Bernstein- General	not Indicated	4 Feb 08	yes	8 Feb 08
	nology Corp	Patent Counsel, Patents Department, Suite 105 Hagley Bldg., 3411 Silverside		The state of the s		
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		email: Bruce. Bernstein@ InterDigital.				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		com, URL: www. InterDigital.				
802.11n	Panasonic Corp	Takeshi Goto-Senior Coordinator, Panasonic	6,608,868 US 6,748,023 US	6 Mar 09;	yes	24 Jul 09
7		Corp, IPR Operation	6,738,430 US 7,328,389 US	24 Jul 09		
1		Company, 2-1-61 Shiromi, Chuo-ku,	EP1022874			
		Osaka City, 540-6207 Japan, tel: +81-6-6949-4525,				
		fax: +81-6-6949-4545, email: goto.takeshi@ jp.panasonic.				
802.11n	Mitsubishi Electric Corp	Hisashi Kato-General Manager, Corporate	not indicated	17 Jun 09	yes	18 Jun 09
	Electric Corp	Licensing Division, 2-7-3 Marunouchi,				0.5
	A C	Chiyoda-ku Tokyo 100-8310, Japan,				
	: : : :	tel: +81-3-3218-3465, fax: +81-3-3218-2474,				
		email: Cld.General@ nj.Mitsubishi Electric. co.jp, URL: www.			٠	
		mitsubishi electric co.jp				
802.11n	Marvell Interna- tional Ltd.	Horace Ng Director of Patent Procurement, Marvell Semiconductor	not indicated	3 Aug 09	yes	4 Aug 09
	i 1	IncLegal, 5488 Marvell Lane,				
1	de la companya de la	Santa Clara CA 95054, tel: +1-408-222-2500,				
		fax: +1-408-222-2755, email: HNG@ marvell.com, URL:				
	1 20 11	com				
802.11n	Ralink Tech- nology Corp	Ellen Lin-1P & Legal Director, 1P & Legal Department,	not Indicated	<u>7 Sep</u> 09	yes	7 Sep 09
		5F, No. 36, Talyuan Street, Dhubei City, Hsinchu County				
		302, Talwan, R.O.C., tel: +886-3-5600868, fax: +886-3-5600818, email: ellen lin@				
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		ralinktech. com.tw				:
802.11n	Texas Instru- ments Inc.	Robby Holland, Legal Department, P.O. Box	not indicated	11 Sep 09	yes	11 Sep 09

	The second of th	655474, MS 3999, Dallas TX 75265, tel: +1-972-917-4367, fax: +1-972-917-4418, emall: r-holland3@ tl.com				
802.11n	Telefonak- tiebolaget LM Ericsson	Anna Johns-Director of Patent Ucensing, North America, Ericsson Inc., 6300 Legacy Drive, Plano TX 75024, tel: +1-972-583-9446, email: anna.johns@ ericsson.com	not indicated	18 Apr	yes	18 Apr 11
802.11n	Nippon Telegraph and Telephone Corporation	Isamu Yoshimatsu- Senior Manager, Licensing Group, Intellectual Property Center, 9-11, Midori-Cho 3-Chome, Musashino-shi, Tokyo 180-8585 Japan, tel: +81-422597192, fax: +81-422595563, email: yoshimatsu. isamu@fab.ntt.co.jp	PCT/JP /2004/008909; JP 4126058; US 7,400,616; CN ZL200480006561.7; KR 688851; CA 2515537; EP 4746378.1; PCT/JP /2004/010355; JP 4054039; US 7,545,781; CN ZL200480009706.9; KR 695601; CA 2518741; EP 4747771.6; PCT/JP /2004/013483; JP 3993214; US 7,280,551; CN ZL200480010898.5; KR 764973; CA 2522032; EP 4773142.7; JP 3590008; US 7,242,720; CN ZL0016244.7; KR 510434; CA 2380977; EP 2290867.7; JP 4112397; JP 4579946; JP 3434784	15. Nov.	yes	15 Nov 11
802.11p	Research In Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rim.com	not Indicated	25 Jun 07	yes, blanket	17-Jul 07
802.11r	Motorola, 1303 E. Algonquin Road, Schaumburg IL 60196	Latonia Gordon- Intellectual Property Licensing, tel: +1-847-576-3055, fax: +1-847-538-3666, email: latonia.gordon@ motorola.com	not Indicated	21 Apr . 05	yes	6 May 05
802.11r	Trapeze Networks, Inc.	Ed Wes-IP Counsel, Perkins Cole ILP, 101 Jefferson Drive, Menio Park CA 94025, tel: +1-650-838-4302, fax: +1-650-838-4350, email: ewes@ perkinscole.com	not indicated	15 Nov 05	yes	16 Nov 05
802.11r	Cisco Systems, Inc., 170 East Tasman Dr, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel:	not Indicated	21 Nov 05	yes	12 -Jul : 07

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802.11r	Intel Corp, 5200 NE Elam Young Parkway, MS JF2-98, Hillsboro OR 97124	ATTN: Standards Licensing Department, tel: +1-503-712-3397, fax: +1-503-264-2769, email: standards.licensing@ Intel.com, URL: www. Intel.com/standards/ licensing.htm	not specified	12 May 06	yes	15 May 06
802.11r	Symbol Technologies, Inc. One Symbol Plaza, Holtsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, tel: +1-631-738-4055. fax: +1-631-738-4110, emall: aaron. bernstein@symbol.com, URL: www.symbol.com	not indicated	11 Apr Ω6	yes	24 Jul 06
802.11r	Microsoft Corp	Standards Requests, Corporate Interoperability and Standards Group, One Microsoft Way, Redmond WA 98052-6399, tel: +1-425-707-1911, fax: +1-425-936-7329, email: stdsreq@ microsoft.com	US 2004 - 0243846 - A1; 7,089,415 US	20 Jun 07; 21 Feb 08	yes	21 Feb 08
802.11r	Research in Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rim.com	not indicated	25 Jun 07	yes, blanket	17 Jul 07
802.11r	Qual- comm Inc., 5775 Morehouse Drive, San Diego CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1 858 658 2502, emall: trouse@ qualcomm. com, URL: www. qualcomm.	not indicated	10 Sep 07	yes	19 Sep 07
802.11r	AT&T Corp.	Joseph F. Sommer, Executive Director- Patent Licensing and Sales: Broadband, AT&T Intellectual Property Organization, 180 Park Avenue, Building 103, Florham Park NJ 07932, tel: +1-973-236-6300, fax: +1-973-360-5800, email: jmsommer@ att.com	6,483,912 US	05 Nov 07	yes	6 Nov 07
802.115	Motorola, 1303 E. Algonquin Road, Schaumburg IL	Latonia Gordon- Intellectual Property Licensing, tel: +1-847-576-3055, fax: +1-847-538-3666,	not indicated	21 Apr 05	yes	6 May 005

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802.115	Apple Computer, Inc., 1 Infinite Loop, Cuperlino CA 95014	Mark Aaker-Legal Dopt., tel: +1-408-974-4347, fax: +1-408-974-5436, emall: aaker@ apple.com	6,069,887 US	10 Oct 05	yes	11 Oct 05
802.11s	Trapeze Networks, Inc.	Ed Wes-IP Counsel, Perkins Cole LLP, 101 Jefferson Drive, Menio Park CA 94025, tel: +1-650-838-4302, fax: +1-650-838-4350, email: ewes@ perkinscole. com	not indicated	15 Nov 05	yes	16 Nov 05
802.115	Intel Corp, 2200 Mission College Blvd, Santa Clara CA 95052	Office of the General Counsel, tel: +1-408-765-1859, fax: +1-408-765-1125, email: earl.nled@ intel.com, URL: www. intel.com/ standards/ licensing.htm	not specified	13 Dec 05	yes	22 Dec 65
802.11s	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards -lpr@ clsco.com	not indicated	8 Jun 06	yes	12-Jul 07
802.11s	Symbol Technologies, Inc. One Symbol Plaza, Hollsville, NY 11742-1300	Aaron Bernstein-VP & Deputy General Counsel, Legal Dept. MS: A-6, Lel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron. bernstein@ symbol.com, URL: www. symbol.com	not Indicated	11.Apr 06	yes	24 Jul 06
802.11s	Huawel Tech- nologies Co., Ltd.	Director of Licensing, Intellectual Property Dept., Administration Bidg, Huawel CampUS Longgang District, Shenzhen, 518129 P.R. China, tel: +86-755-28787136, fax: +86-755-28787222, email: licensing@ huawel.com, URL: www. huawel.com	not Indicated	6. Jan <u>07</u>	yes	9 Jan 07
802.115	Microsoft Corp	Standards Request, Corporate Interoperability and Standards Group, One Microsoft Way, Redmond WA 98052-6399, tel: +1-425-707-1911, fax: +1-425-936-7329, email: stdsreq⊚ microsoft.com	US 2005 0185632 A1	20 lun 07	yes	20 Jun 07

802.115	Qual- comm Inc., 5775 Morehouse Drive. San Diego CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1-858-658-2502, email: trouse@ qualcomm. com, URL: www. qualcomm. com	not indicated	03 Jul 07	yes	7 Jul 07
802.115	Research in Motion Limited	Brian Rivers- VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rim.com	not indicated	25.Jun 9 7	yes, blanket	17 Jul 07
802.115	Fujitsu Limited	Shigeru Kitano-General Manager, Standards Center, Law & Intellectual Property Unit, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa 211-8588, Japan, tel: +81-44-754-3050, fax: +81-44-754-3842, email: kitano. shigeru@ jp.fujitsu.com, URL: www.fujitsu. com/global/	A1-2004- 0103275 US; A-2004-180307 JP; A-1503523 CN; A1-2005- 0152305 US; A-2005-117656 JP	23 Aug 02	yes	10 Sep 07
802.115	Toshiba Corp.	Masayuki Miyanaga-Group Manager, Intellectual Property Group, Research Manning Office, Corporate Research & Development Center, 1, Komukai- Toshiba-cho, Saiwai-ku, Kawasaki, 212-8582, Japan, tel: +81-44-549-2055, fax: +81-44-520-1303, emall: masayuki. miyanaga@ toshiba .co.jp. URL: www.toshiba. co.jp	not indicated	25 Oct QZ	yes	29 Oct 07
802.115	Inter- Digital Tech- nology Corp	Bruce G. Bernstein- General Patent Counsel, Patents Department, Sulte 105 Hagley Bldg., 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878-5688, fax: +1-610-878-7858, emall: Bruce. Bernstein@ InterDigital .com, URL: www. InterDigital. com	not indicated	4 Feb 08	yes	8 Feb 08
802.115	INRIA Institut National de	M. Luc Grateau- Director, Intellectual	FR 9806244 EP 0959602 DE	11 Feb 08	yes	25 Feb 08

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802.115	NTT DoCoMo, Inc.	Akira Hirolke, Intellectual	not specified	4 Mar 08	yes	5 Mar 08
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802.11s	Thomson S.A.,	Elizabeth Mark-VP	not specified	7 Jul 08	yes	14 Jul
	Thomson, Inc.	Licensing-				· 08
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802.11s	LG Electronics	Saeng Gyu Jeon-Vice	not specified	24 Dec	yes	24 Dec
	Inc.	President, Intellectual		<u>08</u>		08
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802.11s	Koninklijke	Larry Liberchuk-Senior	not Indicated	11 Jan	yes	15 Jan
	Philips	1P		10		10
	Electro-	Counsel, Intellectual				
	nics N.V.	Property & Standards, Philips Electronics N.A.				
		Corp., 345 Scarborough		1 1		
		Road, Briancliff				
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		tel: +1-914-333-9602,				
		emall: larry.liberchuk@				
		philips.com				
002 11-	Signan	Unne Joore Mueller	not indicated	7_Fcb	νρε	15 Feb
802.11s	Siemens Aktienge-	Hans-Joerg Mueller - Senior Licensing	not indicated	7.1CD 11	yes	2011
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802.11s	Aruba Networks, Inc.	Kristine Riley-Senior Director, Intellectual Property, Legal, 1344 Crossman Avenue, Sunnyvale CA 94089. tel: +1-408-419-4067, fax: +1-408-541-1361, email: kriley@ arubanetworks. com, URL: www. arubanetworks. com	7,668,173 B2 (US), CN App, 20068000- 8383.0, EP App. 06849004.4	6 May 11	yes	13-May 2011
802.11s	Sony Corp- oration	Hiroshi Kamitani, IP Alliance & Licensing Department, 1-7-1 Konan Minato-ku, Tokyo, 108-0075 Japan, tel: +81-3-6748-3505, fax: +1-81-3-6748-3544, email: Hiroshi. Kamitani@ ip.sony.com	not indicated	13 May 11	yes	16 May 11
802.115	Marvell Interna- tional Ltd.	Horace Ng- Director of Patent Procurement, Marvell Semiconductor IncLegal, 5488 Marvell Lane, Santa Clara CA 95054, tel: +1-408-222-2500, fax: +1-408-222-2755, email: HNG@ marvell.com, URL: www.marvell.	not Indicated	9 Sep 11	yes	10 Sep 11
802.11s	Broadcom Corporation	Jeffrey D. Wheeler - Director of Intellectual Property, Broadband Communications Group, Legal, 5300 California Avenue, Irvine CA 92617, tel: +1-949-926-5473, fax: +1-949-926-6226, email: jwheeler@ broadcom.com, URL: www.broadcom.com	not indicated	6 Oct 11	yes	7 Oct 11
802.11u	Intel Corp, 5200 NE Elam Young Parkway, MS JF2-98, Hillsboro OR 97124	ATTN: Standards Licensing Department, tel: +1-503-712-3397, fax: +1-503-264-2769, email: standards. licensing@ intel.com URL: www.intel.com/ standards/ licensing.htm	not specified	12 May 06	yes	15 May 06
802.11u	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., Itel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-ipr@ clsco.com	not Indicated	30 May 06	yes	12 Jul 07
802.11u	Motorola, Inc., 1303 E. Algonquin Road, Schaumburg IL 60196	Latonia Gordon- Intellectual Property and Licensing Dept. tel: +1-847-576-3055. fax: +1-847-538-3666, email: latonia. gordon@ motorola.com	not Indicated	11 AUQ 06	yes	3 Oct 06

802.11u	Huawel Tech- nologies Co.,	Director of Licensing, Intellectual Property	not Indicated	<u>6 Jan</u> 07	yes	9 Jan 07
	Ltd.	Dept., Administration Bidg, Huawel CampUS Longgang District, Shenzhen, 518129 P.R. China, tel: +86-755-28787136, fax: +86-755-28787222, email: licensing@ huawel.com, URL: www. huawel.com				
802.11u	Microsoft Corp	Standards Request, Corporate Interoperability and Standards Group, One Microsoft Way, Redmond WA 98052-6399, tel: +1-425-707-1911, fax: +1-425-936-7329, email: stdsreq@ microsoft.com	US 11/ 434,394 US 11/ 312,040 US 11/ 313,148	20 Jun 97	yes	20 Jun 07
802.11u	Research in Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N21. 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@rlm.com	not Indicated	25. Jun 07	yes, bianket	17 Jul 07
802.11u	Inter- Digital Tech- nology Corp	Bruce G. Bernstein- General Patent Counsel, Patents Department, Suite 105 Hagley Bidg., 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878-5688, fax: +1-610-878-58, email: Bruce. Bernstein@ InterDigital .com, URL: www. InterDigital. com	not Indicated	4 Feb 03	yes	8 Feb 08
802.11u	LG Electronics Inc.	Saeng Gyu Jeon-Vice President, Intellectual Property Center, LG R&D Complex 533, Hogye- Idong, Dongan-gu, Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, emall: jeongsoo@ ige.com, URL: www.lge.com	not specified	24 Dec 08	yes	24 Dec 08
802.11u	Broadcom Corporation	Jeffrey D. Wheeler Director of Intellectual Property, Broadband Communications Group, Legal, 5300 California Avenue, Irvine CA 92617, tel: +1-949-926-5473, fax: +1-949-926-6226, email: jwheeler@ broadcom.com, URL: www.broadcom.com	not indicated	6 Oct 11	yes	7 Oct 11

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802.11V	AutoCell Labora- tories, 125 Nagog Park Drive, Acton MA 01720	Paul Callahan- Director of Licensing, tel: +1-978-264-4884, fax: +1-978-264-0766, email: pcallahan@autocell.com, URL: www.autocell.com	not indicated	14 Oct 05	yes	14 Oct 05
802.11v	Trapeze Networks, Inc.	Ed Wes-IP Counsel, Perkins Cole LLP, 101 Jefferson Drive, Menio Park CA 94025, tel: +1-650-838-4302, fax: +1-650-838-4350, email: ewes@ perkinscole.com	not indicated	15 Nov 05	yes	16 Nov 05
802.11v	Cisco Systems, Inc., 170 W Tasman Drive. San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-lpr@ clsco.com	not indicated	11 Apr 06	yes	12 Jul 07
802.11V	Intel Corp, 5200 NE Elam Young Parkway, MS JF2-98, Hillsboro OR 97124	ATTN: Standards Licensing Department, tel: +1-503-712-3397, fax: +1-503-264-2769 email: standards. licensing@ intel.com, URL: www. intel.com/ standards/ licensing.htm	not specified	12 May 06	yes	15 May 06
802.11v	Symbol Technologies, Inc. One Symbol Plaza, Hollsville, NY 11742-1300	Aaron Bernsteln-VP & Deputy General Counsel, Legal Dept. MS: A-6, leel: +1-631-738-4055. fax: +1-631-738-4110, email: aaron. bernstein@ symbol.com, URL: www.symbol.com	not Indicated	11 Apr 06	yes	24 Jul 06
802.11v	Motorola, Inc., 1303 E. Algonquin Road, Schaumburg H. 60196	Latonia Gordon- Intellectual Property and Licensing Dept, tel: +1-847-576-3055, fax: +1-847-538-3666, email: latonia. gordon⊕ motorola.com	not indicated	11 Aug	yes	3 Oct 06
802.11v	Research in Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rim.com	not indicated	25.Jun Q7	yes, blanket	17 Jul 07
802.11v	Atheros Communications, Inc.	Bernice B. Chen- Director of 1P, Legal, 5480 Great America Parkway, Santa Clara CA 95054, tel: +1-408-830-5724, fax: +1-408-773-9909, email: bernice@ atheros.com, URL: www.atheros.	not indicated	24 Jul Q7	yes	24 Jul 07

		com				
802.11v	Broadcom Corp, 8303 Mopac Expressway North, Austin TX 78759	H. Shannon Tyson, Jr., Director of Intellectual Property-Standards, Sulte A410, Legal Dept., tel: +1-512-651-9542, fax: +1-512-651-9537, email: standards licensing@ broadcom. com	not Indicated	10 Aug 07	yes	10 Aug 07
802.11v	Inter- Digital Tech- nology Corp	Bruce G. Bernstein- General Patent Counsel, Patents Department, Suite 105 Hagley Bidg., 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878-7688, fax: +1-610-878-7858, email: Bruce. Bernstein@ InterDigital. com, URL: www. InterDigital.	not indicated	4 Feb 08	yes	8 Feb 08
802.11v	NTT DoCoMo, Inc.	Akira Hiroike, Intellectual Property Dept., Sanno Park Tower 36th Floor, 2-11-1 Nagata-cho Chiyodaku, Tokyo 100-6150 Japan, tel: +81-3-5156-1899, fax: +81-3-5156-0233, URL: www. nttdocomo. co.jp	not specified	4 Mar 08	yes	5 Mar 08
802.11v	LG Electronics Inc.	Saeng Gyu Jeon-Vice President, Intellectual Property Center, LG R&D Complex 533, Hogye-Idong, Dongan-gu, Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, email: Jeongsoo@ Ige.com, URL: www.lge.com	not specified	24 Dec 08	yes	24 Dec 08
802.11v	Ruckus Wireless, Inc.	Colby B. Springer- Outside Counsel, Carr & Ferreli LLP, 120 Constitution Drive, Menio Park CA 94025, tel: +1-650-812-3400, fax: +1-650-812-3444, email: CSpringer@ CarrFerrell. com, URL: www. ruckuswireless.	7,505,447 (US), 7,787,436 (US), 1759543 (Europe), 094138837 (Taiwan), 1096814 (Hong Kong), 20058000- 1629.7 (China), 08021224.4 (Europe), 101020949 (Hong Kong), 11/985,865 (US), 12/719,006 (US), 12/718,987 (US)	13 Oct 10	NO	30 Nov 10
802.11v	Qualcomm Inc., 5775 Morehouse Drive, San Diego CA 92121	Thomas R. Rouse, VP QTI Patent Counsel, QTL, tel: +1-858-651-6732, fax: +1-858-658-2502, emall: trouse@ qualcomm. com, URL: www.	not Indicated	9 Jul 10	yes	12 Jul 10

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802.11v	Nippon Telegraph and Telephone Corporation	Isamu Yoshimatsu- Senior Manager, Licensing Group, Intellectual Property Center, 9-11, Midori-Cho 3-Chome, Musashino-shi, Tokyo 180-8585 Japan, tel: +81-422597192, fax: +81-42259563, email: yoshimatsu.isamu⊚ lab.ntt.co.jp	JP 4579947	15 Nov 11	yes	15 Nov
802.11w	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Patents and Standards IPR, Legal Dept., tel: +1-408-526-6672, fax: +1-408-526-5952, email: standards-ipr@ clsco.com	not indicated	28 Dec. 05	yes	12 Jul 07
802.11w	Intel Corp, 5200 NE Elam Young Parkway, MS JFZ-98, Hillsboro OR 97124	ATTN: Standards Licensing Department, tel: +1-503-712-3397, fax: +1-503-264-2769, email: standards. licensing@ intel.com, URL: www. intel.com/ standards/ licensing.htm	not specified	12 May 05	yes	15 May 06
802.11W	France Telecom, 38-40 rue du General Leclerc, F-92794 Cedex 9 Issy Les Moulineaux, France	Mr. Luc Savage- Intellectual Property and Licensing Director, FT/RD/PIV, tel: +33145296158, fax: +33145296560, email: Luc.savage@ orange- ftgroup.com	not specified	29 Mar 06	yes	22 Jul 10
802.11w	Microsoft Corp	Standards Request, Corporate Interoperability and Standards Group, One Microsoft Way, Redmond WA 98052-6399, tel: +1 425-707 1911, fax: +1-425-936-7329, email: stdsreq@ microsoft.com	US 2004 0243846- A1	20 Jun 97	yes	20 Jun 07
802.11w	Qualcomm Inc., 5775 Morehouse Drive, San Diege CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1-858-651-6732, fax: 11 858 658 2502, email: trouse@ qualcomm. com, URL: www. qualcomm. com	not indicated	03 Jul 97	yes	7 Jul 07
802.11w	Research in Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@	not Indicated	17.1ul 02	yes, blanket	17 Jul 07

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802.119	Qualcomm Inc., 5775 Morehouse Drive, San Dlego CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1 858 651 6732, fax: +1-858-658-2502, emall: trouse@ qualcomm. com, URL: www. qualcomm. com	not Indicated	03 Jul 07	yes	7 Jul 07
802.11y	Research in Motion Limited	Brian Rivers- VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W8 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rim.com	not Indicated	25 Jun 97	yes, bianket	17 Jul 07
802.11y	Intel Corp, 2200 Mission College Bivd, Santa Clara CA 95052	Office of General Counsel, Standards Licensing, tel: +1-408-765-1859, fax: +1-408-765-1125, email: standards. ficensing@ ntel.co, URL: www. intel.com/ standards/ ficensing.htm	not specified	14 May 08	yes	15 May 08
802.11z	Intel Corp, 2200 Mission College Blvd, Santa Clara CA 95052	Office of General Counsel, Standards Licensing, tel: +1-408-765-1859, fax: +1-408-765-1125, email: standards. licensing@ intel.com, URL: www. intel.com/ standards/ licensing.htm	not specified	14 May 3	yes	15 May 08
802.11z	LG Electronics Inc.	Saeng Gyu Jeon-Vice President, Intellectual Property Center, LG R&D Complex 533, Hogye-Idong, Dongan-gu, Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, email: jeongsoo@ ige.com, URL: www.lge.com	not specified	24 Dec 08	yes	24 Dec 08
802.11z	Konin- klijke Philips Electronics N.V.	Larry Liberchuk-Senior 1P Counsel, Intellectual Property & Standards, Phillips Electronics N.A. Corp., 345 Scarborough Road, Briardiff Manor NY 10510, Iel' +1-914-333-9602, email: larry.liberchuk@ philips.com	not indicated	11 Jan 10	yes	15 Jan 10
802.11z	Broadcom Corp, 8303 Mopac	H. Shannon Tyson, Jr., Managing Director, Standards &	not Indicated	21 Jan 10	yes	26 Jan 10

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	North, Austin TX 78759	Sulte A410, Legal Dept, tel: +1-512-651-9542, fax: +1-512-651-9537, email: standards licensing@ broadcom.com				The second secon
802.112	Qualcomm Inc., 5775 Morehouse Drive, San Dlego CA 92121	Thomas R. Rouse, VP QTL Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1-858-658-2503, email: trouse@ qualcomm. com, URL: www.qualcomm.	not Indicated	28 Feb 11	yes	1 Mar 11
802.112	InterDigital Patent Holdings, Inc.	Bradley N. Ditty - Senior Patent Executive, Patents, Suite 105 Hagley Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1 - 610-878- 5621, fax: +1- 610-878- 7843, email: bradley.ditty@ interdigital.com, URL: www.interdigital.com	not indicated	8 Sep 11	yes	9 Sep 11
802.112	InterDigital Technology Corporation	Bradley N. Ditty - Senior Patent Executive, Patents, Suite 105 Hagley Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1- 610-878- 5621, fax: +1- 610-878- 7843, email: bradley.ditty@ interdigital.com, URL: www.interdigital.com	not indicated	8 Sep 11	yes	9 Sep 11
802.11aa	Cisco Systems, Inc., 170 W Tasman Drive, San Jose CA 95134	Dan Lang- Director, Intellectual Property, Legal Dept., tel: +1-408-526-6672, email: standards-ipr@ cisco.com	not Indicated	10 Feb 10	yes	11-Feb 2010
802.11aa	NDS Limited	Ismat Levin-Vice President and General Counsel, Legal, One London Road, Staines, Middlesex, TV118 4EX, United Kingdom, tel: +44-20-8476-8380, email: lievin@ nds.com	EP2103042	16 Jun 10	yes	16 Jun 10
802.11aa	LG Electronics Inc.	Jason Jeongsoo Lee, Intellectual Property Center, LG R&D Complex 533, Hogye-I dong, Dongan-gu. Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, email: soo.lee@ige.com, URL: www.lge.com	not specified	31 Jan 12	yes	31 Jan 12

802.11ac	Qual- comm Inc., 5775	Thomas R. Rouse, VP Chief Patent Counsel, Legal,	not Indicated	19 Feb 09	yes	19 Feb 09
	Morehouse Drive, San Dlego CA 92121	tel: +1-858-651-6732, fax: +1-858-658-2502, email: trouse@ qualcomm. com, URL: www. qualcomm.				
802.11ac	Broadcom Corp, 8303 Mopac Fxpressway North, Austin TX 78759	H. Shannon Tyson, Jr., Managing Director, Standards & Intellectual Property, Sulte A410, Legal Dept., tel: +1-512-651-9542, fax: +1-512-651-9537, email: standards Icensing@ broadcom.com	not indicated	21 Jan 10	yes	26 Jan 10
802.11ac	Electronics and Tele- comm- unications Research Institute	Junghwan Yoon, Patent Counsel, Intellectual Property Management Team, 138 Gajeongno, Yuseong-gu, Daejeon 305-700 Korea, tel: +82-42-860-3805, fax: +1-82-42-860-3831, email: hwanyy2@ etrl.re.kr, URL: www.	not indicated	7 Jan 11	yes	10 Jan 11
802.11ac	Lantig Beteili- gungs- GmbH & Co. KG	Benjamin Fechner Patent Counsel, Legal & Patents, Am Campeon 3, 85579 Neubiberg, Germany, tel: +49-(89)-89899-7448, fax: +49-(89)-89899-7936, email: lantiq.patent- administration @ Lantiq.com, URL: www. lantiq.com	not indicated	21 Feb 11	yes	22 Feb 11
802.11ac	Celeno Communi- cations	Nir Shapira-CTO, 26 Zarhin Street, Raanana, 43665 Israel, tel: +97297454646, fax: +97297451941, email: nir.shapira@ celeno.com, URL: www.celeno.com	not Indicated	31 May 11	γ e 5	31 May
802.11ac	Cisco Systems, Inc., 170 West Tasman Drive, San Jose CA 95134	Dan Lang-Vice President and Deputy General Counsel, Legal - Intellectual Property, tel: +1-408-526-6672, emall: standards-lpr@ cisco.com	not Indicated	3 Aug 11	yes	23-Aug 2011
802.11ac	InterDigital Patent Holdings, Inc.	Bradley N. Ditty - Senior Patent Executive, Patents, Suite 105 Hagley Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878- 5621, fax: +1-610-878-7843, emall: bradley.ditty@	not Indicated	8 Sep 11	yes	9 Sep 11

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802.11ac	InterDigital Technology Corporation	Bradley N. Ditty - Senior Patent Executive, Patents, Sulte 105 Hagley Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878-5621, fax: +1-610-878-7843, emall: bradley.ditty@ interdigital.com, URL: www.interdigital.com	not Indicated	8 Sep 11	yes	9 Sep 11
802.11ac	LG Electronics Inc.	Jason Jeongsoo Lee, Intellectual Property Center, LG R&D Complex 533, Hogye-I dong, Dongan-gu, Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, emall: soo.lee@lge.com, URL: www.lge.com	not specified	30 lan 12	yes	31 Jan 12
802.11ad	Qualcomm Inc., 5775 Morehouse Drive. San Diego CA 92121	Thomas R. Rouse, VP Chief Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1-858-658-2502, email: trouse@ qualcomm. com, URL: www. qualcomm. com	not indicated	19 Feb 09	yes	19 Feb 09
802.11ad	John Andrew Stine	John A. Stine, 9322 Eagle Court, Manassas Park, VA 20111-3048, tel: +1-703-257-6478, email: stine@leee.org	7,266,085 US 200501- 90784 US	16 Aug <u>09</u>	yes	17 Aug 09
802.11ad	Electronics and Telecommunications Research Institute	Junghwan Yoon, Patent Counsel, Intellectual Property Management Team, 138 Gajeongno, Yuseong-gu, Daejeon 305-700 Korea, tel; +82-42-860-3805, fax; +1-82-42-860-3831, email; hwanyy2@ etri.re.kr, URL: www.etri.re.kr	not Indicated	7 Jan 11 11 11 11 11 11 11 11 11 11 11 11 11	yes	10 Jan 11
802.11ad	InterDigital Patent Holdings, Inc.	Bradley N. Ditty - Scnior Patent Executive, Patents, Suite 105 Hagley Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878- 5621, fax: +1-610-878-7843, email: bradley ditty@ interdigital.com, URL; www.interdigital.com	not indicated	8 Sep 11	yes	9 Sep 11
802.11ad	InterDigital Tech- nology Corpora-	Bradley N. Ditty - Senior Patent Executive, Patents, Suite 105 Hagley	not Indicated	8 Sep 11	yes	9 Sep 11

	tion	Building, 3411 Silverside Road, Concord Plaza, Wilmington DE 19810, tel: +1-610-878-7843, email: bradley.ditty@ interdigital.com, URL: www.interdigital.com		1 CONTRACTOR OF WARRANCE AND A CONTRACTOR OF THE	The second secon	
802.11ad	LG Electronics Inc.	Jason Jeongsoo Lee, Intellectual Property Center, LG R&D Complex 533, Hogye-I dong, Dongan-gu, Anyang-si, Gyeonggi-do, 431-080 Korea, tel: +82-31-450-7838, email: soo.lee@lge.com, URL: www.lge.com	not specified	30.lan 12	yes	31 Jan 12
802.11ae	Broadcom Corporation	Jeffrey D. Wheeler - Director of Intellectual Property, Broadband Communications Group, Legal, 5300 California Avenue, Irvine CA 92617 tel: +1-949-926-5473, fax: +1-949-926-6226, email: jwheeler@ broadcom.com, URL: www.broadcom.com	not indicated	6.0ct 11	yes	7 Oct 11
802.11ae	LG Electronics Inc.	Jason Jeongsoo Lee, Intellectual Property Center, LG R&D Complex 533, Hogye-l dong, Dongan-gu, Anyang-si, Gyeonggl-do, 431-080 Korea, tel: +82-31-450-7838, emall: soo.lee@ige.com, URL: www.lge.com	not specified	30 lan 12	yes	31 Jan 12
802.11af	Qualcomm Incorporated 5775 Morehouse Drive, San Dlego CA 92121	Thomas R. Rouse, VP QTL Patent Counsel, Legal, tel: +1-858-651-6732, fax: +1-858-658-2503, email: trouse@ qualcomm.com, URL: www.qualcomm.	not indicated	04 Jan 12	yes	4 Jan J2
802.11af	LG Electronics Inc.	Jason Jeongsoo Lee, Intellectual Property Center, LG R&D Complex 533, Hogye-I dong, Dongan-gu, Anyang-si, Gyeonggl-do, 431-080 Korea, tel: +82-31-450-7838, email: soo.lee@lge.com, URL: www.lge.com	not specified	30 Jan 12	yes	31 Jan 12
802.11ai	Qualcomm Incorporated 5775 Morehouse Drive, San Diego CA 92121	Thomas R. Rouse, VP QTI Patent Counsel, Legal, tel: +1-858-587-1121, fax: +1-858-658-2503, emall: trouse@ qualcomm.com, URL: www.qualcomm. com	not indicated	05 Oct 11	yes	5 Oct 11

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IEEE-SA - IEEE 802.11 and Amendments Patent Letters of Assurance

http://standards.iccc.org/about/sasb/patcom/pat802_11.html

802.11.2	Research In Motion Limited	Brian Rivers-VP of Licensing, Department of Licensing and Standards, 305 Phillip Street, Waterloo ON, N2L 3W6 Canada, tel: +1-519-888-7465, fax: +1-519-883-4914, email: brivers@ rlm.com	not Indicated	25.1un 07	yes, bianket	17 Jul 17
802.11.2	Intel Corp, 2200 Mission College Blvd, Santa Clara CA 95052	Office of General Counsel, Standards Licensing, tel: +1-408-765-1859, fax: +1-408-765-1125 email: standards. licensing@ Intel.com, URL: www. Intel.com/standards/ licensing.htm	not specified	14 May 08	yes	15 May 08

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